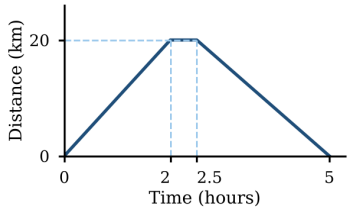
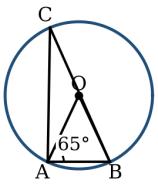
Day 279 **S Tier 10-a-day**

1 The graph shows Amir's cycle ride to a café and back.
(a) Work out Amir's speed on the way back.
(b) Work out Amir's average speed for the whole ride, including the stop.



2 A, B and C are points on a circle, centre O.
Angle OAB = 65°.
(a) Work out the size of angle AOB.
(b) Work out the size of angle ACB.
The diagram is not drawn accurately.



3 A metal crate in the shape of a cuboid weighs 480 N.
Its smallest face has area 200 cm^2. Its largest face has area 1,000 cm^2.
Pressure = force ÷ area
Work out (a) the greatest pressure and (b) the least pressure the metal crate can exert on the ground, in N/m^2.

4 A bag contains sweets.
$\frac{3}{10}$ of the sweets are orange and $\frac{1}{3}$ of the sweets are lemon.
The rest of the sweets, 22 of them, are strawberry.
How many orange sweets are there?

5 Callum invests £6,500 at 8% per year compound interest.
After how many whole years will the investment first be worth more than £11,300?
(Calculator)

Day 279	S Tier 10-a-day
6 A circular arc has a chord AB of length 42 cm. The greatest distance between the chord and the arc is 7 cm. Work out the radius of the circle.	
7 The 3rd term of a geometric sequence is 16. The 5th term of the sequence is 64. All the terms of the sequence are positive. (a) Work out the common ratio. (b) Work out the first term.	
8 A point A is on level ground in line with the base of a mast. (Calculator) The angle of elevation of the top of the mast from A is 43°. B is a point on the same line, 20 m further from the mast than A. The angle of elevation of the top of the mast from B is 16°. Work out the height of the mast. Give your answer to 1 decimal place.	
9 $N = 2^5 \times 3^2 \times 5$ How many of the factors of N are odd numbers?	
10 A is the point $(0, -1)$ and B is the point $(6, 3)$. Find an equation of the perpendicular bisector of AB. Give your answer in the form $y = mx + c$.	